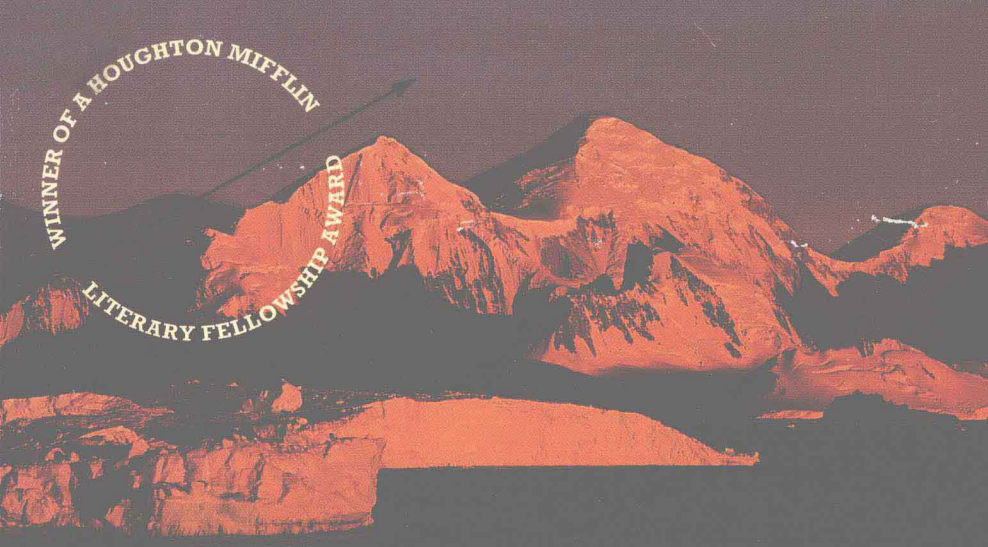

the crystal desert

summers in antarctica

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DAVID G. CAMPBELL

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The Crystal Desert

Summers in Antarctica

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For Jean, Karen, and Tatiana

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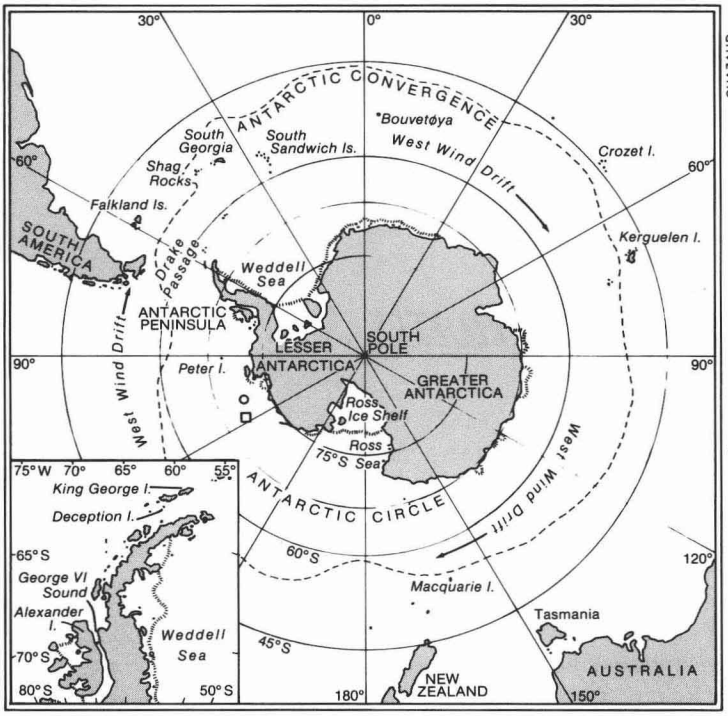
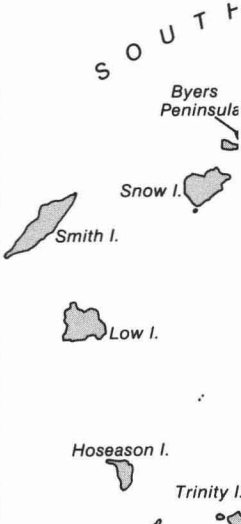
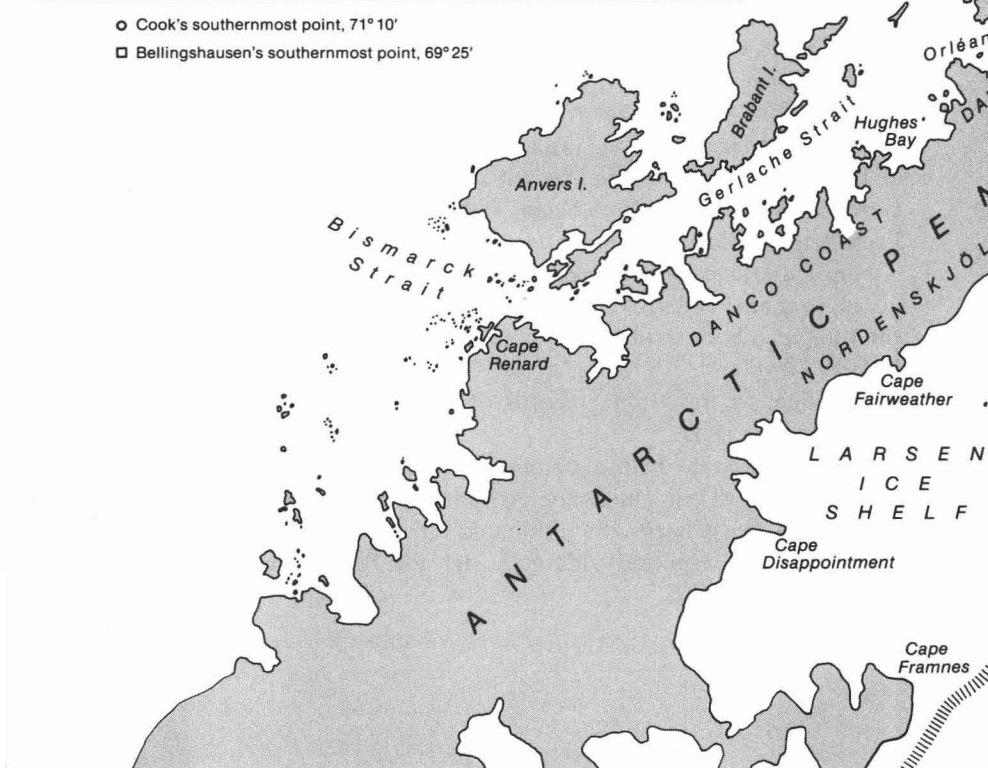


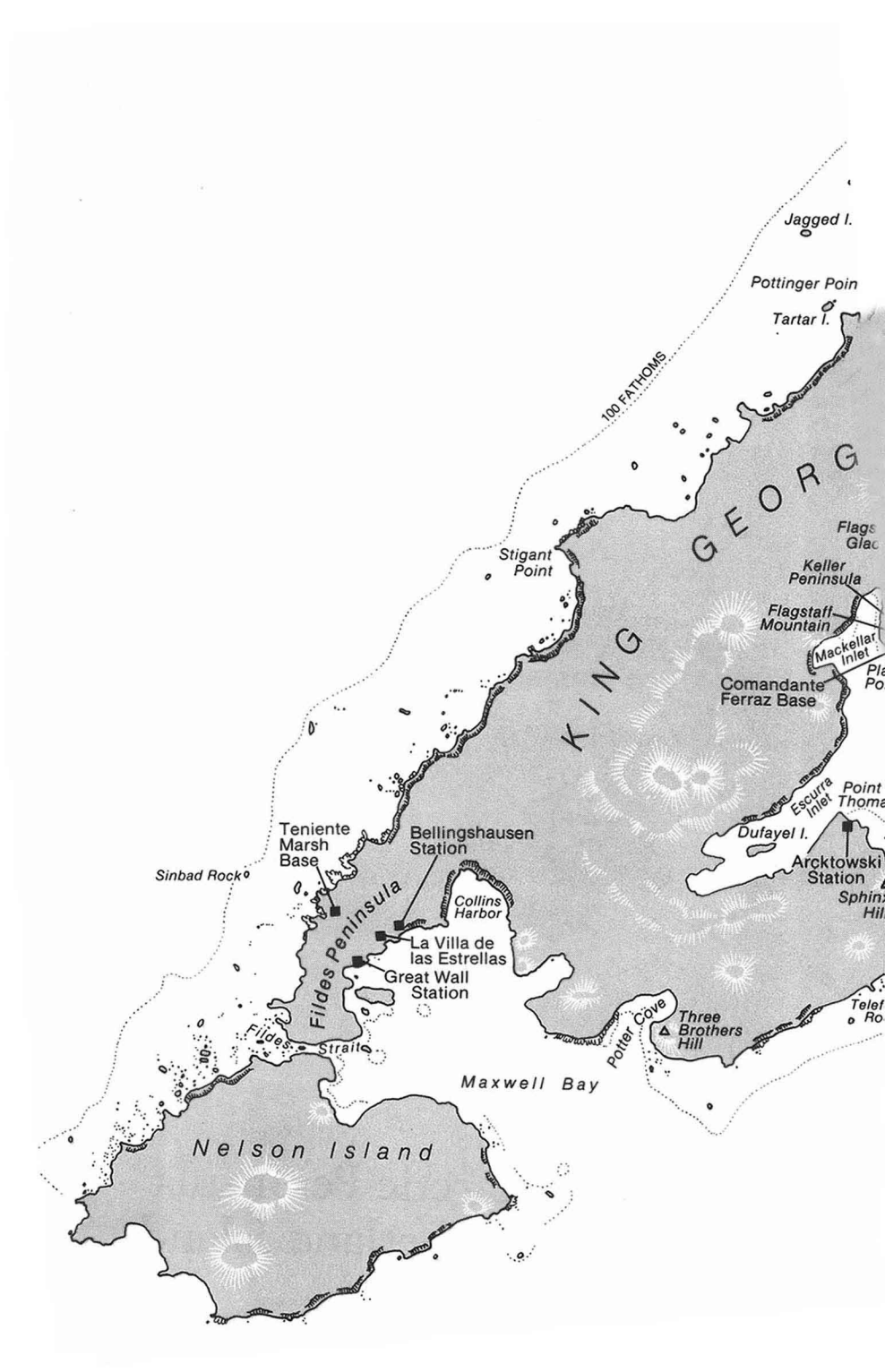


○ Cook's southernmost point, 71° 10′

□ Bellingshausen's southernmost point, 69° 25′



The Antarctic Peninsula and South Shetland Islands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Collins Harbor
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Great Wall Station
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King George Island

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Prologue: Admiralty Bay

> The summer's flower is to the summer sweet,
> Though to itself it only live and die.
>
> — WILLIAM SHAKESPEARE

I SPENT THREE SUMMERS in Antarctica, in places beyond the horizon of most of the rest of my species. The journeys all took place during that single long day that begins in October and ends in March. Sometimes, in the sere, glaciated interior of the continent, Antarctica seemed to be a prebiotic place, as the world must have looked before the broth of life bubbled and popped into whales and tropical forests — and humans. I was as lonely as an astronaut walking on the moon. But at other times, during the short, erotic summer along the ocean margins of the continent, Antarctica seemed to be a celebration of everything living, of unchecked DNA in all its procreative frenzy, transmuting sunlight and minerals into life itself, hatching, squabbling, swimming, and soaring on the sea wind.

My journeys were principally to the Antarctic Peninsula, a spine of rock and ice at the bottom of the Western Hemisphere that rambles north toward South America from the glacial fastness of the southern continent and then bends eastward, as if submitting to the prevailing westerly winds and currents of the Drake Passage. This is the "maritime" Antarctic, where the ex-

tremes of temperature are modulated by the sea. Explorers who have been to the frigid interior of the continent call the peninsula and its nearby islands the "Banana Belt" of Antarctica.[1] It rains frequently during the summer, and once, in late January, I watched the thermometer climb to 9° centigrade. The rest of the continent, ice-fast and arid, is a true desert and is mostly lifeless.

Northwest of the peninsula are the South Shetlands, an ocean-sculpted arc of islands, some with active volcanoes, that reminded the first homesick and frightened Scottish sealers of those treeless, windblown islands of the North Sea. The sealers named the new islands Clarence, Elephant, King George, Nelson, Greenwich, Livingston, and Snow, after various monarchs, captains, mammals, meteorological events, and hometowns. Set off from the archipelago is aptly named Deception Island, an active volcano with a secret caldera where ash-blackened snow mimics rock. These islands of ice and black basalt, now and then tinged russet or blue by oozings of iron or copper, rise over 600 meters. Their hearts are locked under deep glaciers, a crystal desert forever frozen in terms of our short life spans, but transient in their own time scale. Sometimes one sees only the cloud-marbled glacial fields, high in the sun above hidden mountain slopes and sea fog, Elysian plains that seem as insubstantial as vapor. The interiors of the glaciers, glimpsed through crevasses, are neon blue. Sliding imperceptibly on their bellies, the glaciers carve their own valleys through the rock, and when they pass over rough terrain they have the appearance of frozen rapids, which is in fact what they are, cascading at the rate of a centimeter a day. Sudden cold gusts, known as katabatic winds, tumble down their icefalls to the shore; sometimes the coast snaps from tranquility to tempest in just a few minutes. Just as quickly the glacial winds abate, and there is calm. Where they reach the sea, the glaciers give birth to litters of icebergs, which usually travel a short distance and, at the next low tide, run aground on hidden banks. Most of the ice-free land is close to shore, snuggled near the edge of the warm sea in places that are buffeted by both sea wind and land wind, where

rain changes to snow and back. There is no plant taller than a lichen here, no animal larger than a midge — biological haiku. But on protected slopes, where the snow melts on warm summer days and glacial meltwater nourishes the soil, lichens and mosses dust the hills a pale gray-green, and the islands take on a tenuous verdancy.

The Pacific and Atlantic oceans meet at the South Shetland Islands. Indeed, all of the world's oceans mix in the Southern Ocean, the circumpolar sea that so absolutely isolates Antarctica from the other continents. Only a few small islands fleck this globe-girdling sea, and the westerly storms that orbit the Earth at these latitudes, unimpeded by land masses and always sucking energy from the sea, develop the anger of hurricanes. These zones are the "roaring forties" and "screaming fifties," which have commanded the respect and fear of sailors since the time of Francis Drake. Today satellite photographs show these low-pressure zones, spiraling clockwise, regularly spaced, separated by several hundred kilometers of calm sea — a flowered anklet on the planet Earth. But the Southern Ocean is a manic sea, and between the tempests there is tranquility and light. To the land-bound on the South Shetland Islands, the distance between cyclones is measured in time, three to five days apart.

If the bright ice and dark rock are the canvas of these desert islands, then light is the medium, and the Southern Ocean, ever fickle, often angry, is the artist. She swathes the islands in mist, or snow, or clarid sea-light, depending on her moods. Sometimes the sea rages for days, and you can lean against the wind, rubbery and firm. The wind lifts the round pebbles from the beach and flings them like weapons at hapless beachcombers. The cyclonic winds march around the compass, so at one moment they will herd the icebergs against the shore in a groaning cluster, and a few hours later waft them out to sea like feathers on a pond. At other times there will be a clammy calm, a disquieting purple grayness that smothers light and sound, punctuated only by the distant, muffled crack of a calving glacier. The days one antici-

pates are the tranquil ones that break the long captivity of cabin fever, when the sky is a transparent blue, and the deep, clear sea scintillates with shafts of sunlight.

King George Island lies in the middle of the South Shetland archipelago. Like the Antarctic Peninsula, 96 kilometers to the east across Bransfield Strait, it seems to bend slightly to the westerly currents. Ninety-five percent of the island is permanently covered with ice. The smooth domes of glaciers are the highest places on the island, all above 580 meters. Echo-sounding has proved that some of these glaciers have their feet at sea level. Along the shore the temperature is more or less constant, no more than 5° or 6° C above or below freezing, winter and summer. The seasonal and daily cycles of freeze and thaw create a disheveled landscape of wet landslides and cleaved rocks; some rocks are shattered in leaves, like sliced bread. There is precipitation three hundred days a year, and an equal probability of rain and snow during all months of the year. The northern shore of King George Island takes the full brunt of the wind and the sea; the breakers arrive unimpeded all the way from Tasmania. The coast is flecked by numerous rocky islets and scalloped by crescent bays. Many features are uncharted and unnamed. Others bear names of fancy: Sinbad Rock, Jagged Island, Tartar Island, Hole Rock, Venus Bay; or of tragedy: Destruction Bay.

On the north face of King George Island, the outer edge of Antarctica, cliffs of ice act as giant airfoils, pushing the sea wind up their faces onto the frozen, white plateau of the island. Once, during a blizzard, I walked along this shore and watched fat snowflakes fly skyward in seeming defiance of gravity. In the dark ocean below, the ricocheting swells converged on unseen banks, and the sea seemed to be spontaneously erupting. On clear days the summer sunlight refracts in these sea-lenses and the ocean appears to be glowing from within. In the half-moon bays below the cliffs, the volcanic basalt is ground to smooth pebbles. During the austral summer the seafaring flotillas of juvenile penguins come ashore to rest, and their white bellies look like stranded icebergs on the black beaches. The elephant seals, like huge grubs,

wallow in their own oily excrement. If you walk amid the shuffle of broken algae and limpet shells, where the pebbles boom with each breaking swell and the icebergs ping and crackle offshore, you smell none of the familiar seashore odor of decomposition of more temperate climes; there are no beach flies or scuttling crabs. Everything remains frozen, immutable.

The southern, leeward shore of King George Island is not as rugged and steep as the north, and most ships arriving across the stormy Drake Passage from the tip of South America, 970 kilometers to the north, hie to shelter there. They skirt the North Foreland, on the eastern edge of the island closest to South America, and sail past Cape Melville, Sherratt Bay, Three Sisters Point, Penguin Island, and King George Bay, where in 1819 William Smith, commanding the brigantine *Williams,* planted the Union Jack and named the island after his distant and unknowing sovereign. And then a vast anvil-shaped bay opens to the northwest and invades the heart of the island. This is Admiralty Bay, a three-fingered fjord that is one of the safest anchorages in all of Antarctica. It is also perhaps the prettiest place in Antarctica. The bay splits into three deep inlets: Mackellar, which suffers a southern exposure and is sometimes chopped by storm and wave; Escurra, which is scoured by sudden katabatic winds; and Martel, which offers safe anchorage in winds from all directions. All three inlets terminate in glaciers that flow down from the heart of the island, nudging spongy moraines along their flanks, and during the summer cluttering the bay with icebergs. The bay itself was born of fire and ice. A tectonic fault line, where two plates scrape against each other, is buried five hundred meters deep. The flanks of the bay were carved from timeless rock by the huge ice sheets of the Pleistocene ice ages, when sea levels were lower than they are today. Admiralty Bay may be a microcosm of all Antarctica. It is oceanic, it is terrestrial, and its heart is glaciated, but during the summer its shores are warm and rainy.

During the ever-bright Antarctic summer day, the sun marches around the northern horizon and only briefly dips from sight. The nights never really blacken but are long and often pastel twi-

lights.[2] The summer bay is a huge nursery, denizened with all manner of life: humpback whales, elephant and leopard seals, giant petrels, skuas and terns. The Weddell seals spend the winter in the bay, chewing breathing holes in the pack ice. By October the females have climbed onto the ice to give birth, and for a few days the ice is stained red with natal blood. The penguins — first the Adélies and gentoos and then the chinstraps — arrive from September to December. The males stake out their little plots and shortly after are joined by the females. By the time I arrive in mid-November, it is already late spring. The big-eyed elephant seal pups are six weeks old and weaned. They lounge on the beaches, mustering the courage to venture into the sea for the first time. The Weddell seal pups, although still nursing, are not far behind.

In the mouth of the bay, which is five kilometers wide and subject to the passions of the open sea, penguins weave through the swells on their way to nesting colonies on the shore, looking like small piebald porpoises. The whole western entrance of the bay, from Demay Point to Point Thomas, is a guanoed penguin metropolis. During the summer, amorous penguins, each pair defending a modest cairn of pebbles, position themselves over the low hills and beaches with geometrical precision, exactly one pecking length in every direction from their neighbors. The rookeries are a cacophonous bustle of activity: bickerings, ecstatic displays, pebble robbing. By December the low volcanic hills are buffed pink with guano, and when the wind is westerly, the stench of the rookery wafts kilometers out to sea.

Behind the penguin rookery, the shoulders of the mountains rise in tiers of snow and black scree, capped with ever-present glacier. The Antarctic terns, black-headed and sharp-winged, lay their eggs in the shelter of these wind-roamed rocks. They course over the beach and sea, screaming at intruders, on their way to clip fish and krill from the bay. From prominent vantage points behind the penguin rookery, the skuas have set up their vigil for unguarded eggs and early chicks. They fly low and fast, just above the upturned heads of the nesting penguins, trying to evoke an